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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,287	03/01/2004	Christopher Jones	1391-27809	9502
23505	7590	12/29/2004		EXAMINER
CONLEY ROSE, P.C. P. O. BOX 3267 HOUSTON, TX 77253-3267				GABOR, OTILIA
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/790,287	JONES ET AL.
	Examiner	Art Unit
	Otilia Gabor	2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 October 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-60 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 1-46 is/are allowed.
 6) Claim(s) 47-60 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 01 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 08/04, 10/04.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

Response to Amendment

1. The amendment filed 10/25/2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 47-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 47, the phrase "can be used" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The rest of the claims are rejected as being dependent from the rejected claim 47.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 47-56, 59, 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. (U. S. Patent 5317156) and further in view of Mori et al. (6,455,852).

Cooper et al. discloses an apparatus and method for determining the concentration of carbon isotope present in a sample, the apparatus comprises:

- a laser source 15 which is a tunable laser diode, for emitting at least one laser beam onto
- a sample cell 12S containing a sample with an unknown concentration of the carbon isotope and onto
- a reference cell 12R containing a known sample having a known concentration of the target substance
- a detector 20S for detecting the radiation that passed through the sample cell 12S and providing a first signal indicative of the intensity of radiation after being passed through the sample cell; the signal is indicative of how much is being absorbed by the sample, which also is indicative of the sample's transmittance
- a detector 20R for detecting the radiation that passed through the reference cell 12R and providing a second signal indicative of the intensity of radiation

- after being passed through the reference sample; the signal is indicative of how much is being absorbed by the composition which is also indicative of the composition's transmittance
- a microprocessor 95 for receiving the first signal from the sample detector 20S and the second signal from the reference detector 20R through the processing electronics, and calculating the ratio of the signals in order to determine the concentration ratio of the sample and the reference from which the concentration of the carbon isotope in the sample is calculated.

In one embodiment, there is one laser beam generated and split so that a portion of it reaches the sample cell and another the reference cell (see Fig.3A), an in another embodiment two separate laser beams are used so that one beam reaches the sample cell and another the reference cell (see Fig.2). The sample used can contain methane (thus a hydrocarbon) (see Col.9, line 57). The temperature of the sample and the reference was controlled and kept constant (see Fig.4B). Having used two different wavelength beams through both cells, the carbon isotopic composition of individual compounds in the sample gas mixture is calculated (i.e., the concentration of $^{13}\text{CO}_2$ relative to $^{12}\text{CO}_2$ is calculated in a mixture of gas from the breath or from methane). Cooper et al. in Col.8, lines 30-60, discloses calibrating the sample and reference cells relative to the pressure of the gas in the cell and thus the pressure (one parameter) in the reference cell is normalized.

Cooper et al. discloses in Col.8, lines 41-61 steps to normalize the ratio between the response of the reference cell and the sample cell to different pressures, and thus the

response of the sample cell and the reference cell to the pressure is normalized one against the other.

Regarding claims 47, 59, 60 Cooper fails to disclose a pre-dilution cell, however, according to Mori et al. when an isotopic ratio is calculated based on reference and sample cell measurements it is advantageous to calibrate the reference sample by measuring the sample gas in pre-diluted and diluted form and dilute the sample gas according to the measurement data obtained, and thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pre-dilution cell in the Cooper device since it allows for calibration of the reference sample. The use of nitrogen and noble gases as diluents is well known in the art. Also, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations, and that the recitation that an element is adapted to or capable of performing a function is not a positive limitation but only requires the ability to so perform (*Ex parte Masham*, 2 USPQ 2d 1647 (CCPA 1987), *In re Hutchison*, 69 USPQ 138 (CCPA 1946)). Thus, the fact that the portion of the fluid which is contained in the pre-dilution cell provides an information which can be used by the microprocessor does not mean that it actually does. Additionally, since there are no positive functional steps claimed as to what type of information this fluid contains nor how this information is being generated, the recitation that it does contain some information which can be processed is not a positive limitation in the claim; after

all, all processors can process any signals that are arriving at their terminal, and any fluid contained in any cell or chamber can provide some information about the fluid.

Regarding claim 56, since Mori discloses measuring the fluid in its pre-diluted and diluted forms and the measurement is done through illuminating the fluid, the presence of a detector to measure the beam that passes through the cell is inherently present.

Allowable Subject Matter

8. Claims 1-46 are allowed.
9. Claims 57, 58 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter: Based on the Affidavit presented by Applicant Jones, the enablement rejection is removed, and since the prior art applied does not include the limitation that the parameter to be calculated is the enrichment or depletion of the isotope, the independent claims 1 and 17 were found to include allowable subject matter. Regarding independent claim 36 there is no evidence in the prior art searched of a tool for determining the amount of carbon isotope in a fluid with the specifics as claimed, especially that both the reference and sample cells have a detector at their inlet as well as at their outlet whereby the sample-measurement beam is measured by the first upstream (inlet) and first downstream (outlet) detectors and the reference-measurement

beam is measured by the second upstream (inlet) and second downstream (outlet) detectors. Regarding claims 57, 58 there is no evidence in the prior art searched of a tool as claimed in the claims, especially that there is a first, second and third upstream, and first, second and third downstream detectors to detect the signal before and after the beam enters the sample, reference and pre-dilution cells.

NOTE: in the previous office action claim 56 was indicated as containing allowable subject matter in error.

Response to Arguments

11. Applicant's arguments with respect to claims 47-56, 59, 60 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2878

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday, Thursday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Otilia Gabor
Examiner
Art Unit 2878

